

of available variations of the alphanumeric key for user selection. The available variations of the alphanumeric key for user selection include preferably a set of variations representing a plurality of ways in which the alphanumeric key can be displayed, including variations of the alphanumeric key having accents used in certain languages. For illustration purposes, a selectable list of available variations of the alphanumeric character “a” is shown displayed in **FIG. 20**, in response to the letter “a” being selected for the predetermined time limit  $T_1$ . When a particular variation of the alphanumeric character “a” is selected, it will replace the corresponding alphanumeric character “a” in the text editor window of the first process 30.

#### Alternative Character Sets

[0119] In the first embodiment, the input management system 20 and the input management director 34.3 use alphanumeric characters that are selected for a predetermined period of time as the trigger for a redirection of keyboard input from the first process 30 to the second process 34. In another aspect of the present invention, the input management system 20 and the input management director 34.3 can be configured to use other character sets to serve as the trigger for a redirection of keyboard input. In this variation, redirection of keyboard input is triggered by the selection of a character from another character set for the predetermined period of time. In this variation, the input management system 20 and the input management director 34.3 can be configured to support any set of characters which the user may then select and use to enter text into the personal computing device 10. The terms “character set” and “set of characters” refer to a set containing a plurality of letters, numbers and/or other typographic symbols. Examples of character sets include, but are not limited to, one or more alphabets of a written language (for example, English, French, German, Spanish, Italian, Chinese, or Japanese), and binary-coded character sets such as ASCII (American Standard Code for Information Interchange), EBCDIC (Extended Binary Coded Decimal Interchange Code), BCD (Binary Coded Decimal), and Unicode.

#### Pointer-Type Events

[0120] In another variation of the first embodiment, when a virtual keyboard is used in place of the physical keyboard 14.1, selection and deselection of keys on the virtual keyboard are preferably communicated directly to the predictive text entry system 34.1. Pointer-type devices such as a stylus and a mouse are used to generate pointer-type input events. In general, pointer-type input events comprise information identifying the state of the pointer-type device, for example, the “up” state or no contact state, and the “down” state or contact state. In addition, selection and deselection of a completion candidate display in a graphical user interface, through the use of a pointer-type device, will also preferably result in communication of the pointer-type input events directly to the predictive text entry system 34.1.

[0121] In response to receiving a pointer-type input event, the predictive text entry system 34.1 in this variation is configured to verify whether the pointer-type input event is associated with a recognizable region of the touch sensitive screen. If the pointer-type input event is not associated with the recognizable region of the touch sensitive screen, the predictive text entry system 34.1 simply ignores the event. If the pointer-type input event is associated with the recog-

nizable region of the touch sensitive screen, the predictive text entry system 34.1 translates the pointer-type input event into a translated event representing (a) an equivalent input key event if the pointer-type input event is associated with selection or deselection of a key on the virtual keyboard, or (b) an unrecognized input key event if the pointer-type input event is associated with selection or deselection of a completion candidate displayed in the graphical user interface. Equivalent input key events are passed on to the input management director 34.3 for processing, which processes such equivalent input key events following the logic described in the first embodiment above with reference to **FIG. 4**. After an equivalent input key event is processed by the input management director 34.3, it is passed back to the predictive text entry system 34.3, which determines whether the output related to this input key event needs to be sent to the process with system-level input focus in the form of character messages. Note here that the predictive text entry system 34.1 continues to use on the focus recorder, as in the first embodiment, to decide where the input associated with the selected completion candidate or virtual key (as the case may be) should be sent.

[0122] In the variation immediately above, continued selection of a virtual key on the virtual keyboard using a pointer-type device (such as a stylus or mouse) preferably results in the redirection process being triggered as described in the first embodiment with reference to **FIG. 4**. Here a pointer-type input event identifying an “up” state for the associated pointer-type device will initiate the process of redirection cancellation described in the first embodiment with reference to **FIG. 4**.

[0123] In another alternative variation, the virtual keyboard can operate as a separate entity from the predictive text entry system 34.1. With this arrangement, where the virtual keyboard produces input key events as a result of key selection and deselection, similar to a physical keyboard, the input management system 20 (as in the first embodiment) preferably monitors for selections and deselections of keys from the virtual keyboard. An example of such a virtual keyboard is the On-Screen keyboard provided by Windows XP™.

#### Enhanced Keyboard-Type Device

[0124] Referring to **FIGS. 21 and 22**, in yet another aspect, there is provided an enhanced keyboard-type device 200. In this aspect, the enhanced keyboard-type device comprises:

- [0125] (a) a plurality of user input signal generators for producing first input signals in response to user actuation thereof;
- [0126] (b) a display device; and
- [0127] (c) a processor circuit in communication with the display device and the user input signal generators.

[0128] In the embodiment illustrated in **FIGS. 21 and 22**, the plurality of user input signal generators comprises a plurality of keys, and more particularly, a plurality of physical keys represented by keyboard 206, which operates as an ordinary keyboard. In this embodiment, the display device comprises a touch-screen display which is represented by touch sensitive screen 210. The processor circuit is illustrated in **FIG. 21** and comprises, in the embodiment